Chapter I. Description. Geology. *Pluvial Formations.*

Pluvial aggregations are common chiefly on the slopes of trap hills and at the sides of some of the larger valleys. Much of the quasi-lateritic soil and rock met in such positions is of purely pluvial origin, but as a rule this class of deposits is so mixed with the local results of weathering that no line of separation can be traced. Considerable areas in the neighbourhood of Belgaum are covered with formations thick enough to mask the true sub-rocks.

Large tracts of the quartzite region along the northern slope of the hills north-east of Mamdápur in Gokák are covered with almost pure sand.

Ruined Rock.

Accumulations of ruined rock are met everywhere, and are often very widespread, especially at the foot of the quartzite slopes and scarps where they make the ground very rough and impassable. To the north-east of the Nesargi travellers' bungalow, on the Belgaum-Kaládgi road, they are so thick as to a very great extent to obscure the geological boundary lines.

Soils.

From a geological view point the soils may be divided into two main classes the red and the black. The red soils are primary soils, that is they are the direct result of the decomposition of iron-bearing rocks. The black soils are secondary soils, that is they are the result of primary decomposition changed by accession of organic matter. The black soil is not solely the result of the weathering of trap rocks. Black soil occurs quite as largely and as typically on the gneiss and other azoic rocks as it does on the trap.

Climate.

The pleasantest climate in the district is in a tract parallel with the crest of the Sahyádris, between the western forests and the treeless east. Within this belt lie Belgaum, Kitur, Páchápur, Sankeshvar, and Nipáni.[1]

The dry east winds which blow from October to March and the heavy south-west rains which last from June to October make the climate of Belgaum trying to new-comers. At the same time to the robust and to those who are accustomed to the climate, the two thousand feet above the sea, the moderate heat, and the early and fresh sea-breeze, make Belgaum pleasant and healthy.

The healthy influence is especially noticed in European children who thrive wonderfully and have a bloom on their cheeks during the colder months. Still a long residence enervates. Europeans who have grown up in Belgaum as a rule are pale, delicate, and weak. Newcomers again suffer in consequence of the sudden change from the extreme dryness of the air in the fair season to the great dampness of the rains. Unless with very active exercise the skin does not act, the liver grows sluggish and congested, and languor and drowsiness pass into sleeplessness, loss of appetite, and listlessness. The strong with the help of active exercise after a time throw off these feelings and enjoy vigorous health; but so long as they remain in Belgaum the weakly are doomed to suffer more or less. The climate of Belgaum is unsuitable to those who are liable to

[1] Kies' Southern Marátha, 24.

suffer from sluggishness of the liver, asthma, heart-disease, rheumatism, Bright's disease of the kidneys, or consumption; on the other hand those who have suffered from malarious fevers as a rule improve by a residence in Belgaum.

Seasons.

The Belgaum year may be arranged into three seasons, the cold and dry season from the middle of October till the middle of February; the hot and dry season from the middle of February till the beginning of June; and the wet season from the beginning of June till the middle of October. About the middle of October the cold weather perceptibly sets in, the evening air begins to be chilly, heavy fogs gather soon after sunset, and towards the morning and for some time after sunrise the country is shrouded in thick mist. Towards the end of December or early in January the night temperature is at its minimum. In 1879 December showed a mean temperature of 67°. During the whole period the weather is fine with strong dry easterly winds which make the cold of the coldest month less felt than the damp chill of July and August. The cold season lasts till the middle of February, when both the day and the night temperature begin to rise. The common cold-weather diseases are bronchitis, dysentery, dyspepsia, and malarious fever, which last, though prevalent all the year round, is at its highest from November to January. The hot season sets in about the middle of February and the temperature rises rapidly until it reaches 100° in May. The prevailing wind is from the west. In April and May the great heat causes occasional heavy showers attended with easterly winds, thunder, lightning, and sometimes with hail.[1] Even in May the nights are cool, almost chilly. Dew forms from sunset to sunrise and is sometimes as heavy as gentle rain. Even in the hottest days *pankhás* or damped grass screens

---

1 The following accounts of thunderstorms which passed over Belgaum in 1847 (7th April) and 1849 (24th April and 2nd June) are taken from the Transactions of the Bombay Geographical Society, IX. 191-194. During the week ending the 9th of April 1847 the weather was warm, the thermometer at 2 P.M. ranging from 88° to 92°. The afternoons were ushered in by strong squalls from the south-west and north-east, with occasional clouds of dust and whirlwinds. These were usually followed by heavy clouds, and by thunder and lightning at night. About four in the evening of the 7th April the wind rose almost to a storm, accompanied by rattling peals of thunder followed by a fall of hail and rain which lasted for an hour. The thermometer which before the storm had stood at 90°, had at its close fallen to 70°. Upwards of half an inch of rain fell. A native man and woman were struck dead by lightning near the Collector's office. During the whole of April 1849 the weather was very trying. Every evening large dense clouds hung over the town and threatened a thunderstorm. But on every occasion they were blown off by a current of high wind and dust, followed by thunder and most vivid lightning. Up to the 24th there were three or four smart showers of rain and one slight hail shower. On the evening of the 2nd of June (1849) an extremely severe storm of wind and rain passed over Belgaum. Slight rain began at four, but the storm did not burst till five. The rain lasted from five till half-past eight during twenty minutes of which there was an awful hailstorm. Such large hailstones had never been seen at Belgaum. They were neither spherical nor oval, but irregular-shaped as if a number of small stones had united in their descent from the clouds. The thunder was deafening and the lightning very vivid and frequent. The hurricane ruined the plantain groves and smaller fruit trees. Five inches of rain were registered in the Highlanders' Hospital and in the fort a little more than two inches. Scarcely a house escaped without being stripped of some of its tiles. Several lives were lost in the neighbourhood of Shahápur about a mile to the south of Belgaum.

Chapter I. Description. Climate. *Rain.*

are never required. The occasional showers of April and May become more frequent and heavy as the south-west rains draw near. So gradual is the approach of the south-west monsoon that in some seasons it is hard to tell which storm is the burst of the true monsoon. The break of the south-west monsoon, which supplies the district with most of its rain, is generally looked for about the 5th of June. The south-west rains last till the middle of October. They are not followed by a period of complete dryness. At Belgaum showers fall during almost every month in the year. In June July and August the air is so moist that stoves or *sigris* are required to dry houses and clothes.[1]

Near the Sahyádris the south-west monsoon is very constant and heavy. Further east it is fitful, coming in showers separated by breaks of fair weather. To the east of a line drawn from Nipáni, through Sankeshvar, Páchápur, Ankalgi, Marihalli, the Yellurgad ridge, and the Malprabha crossing on the Belgaum-Dhárwár road, the decrease of rain is sudden, and is accompanied by a marked change in the look of the country and in the style of the houses. To the west of this line the houses have tiled pent roofs with wide eaves to carry the water clear of the mud walls. To the east of the line the greater number of houses have flat-terraced roofs of beaten mud able to stand only a moderate rainfall.[2] The eastern plain, besides fitful showers from the south-west monsoon, receives a scanty supply from the north-east or Madras monsoon. The north-east monsoon is looked for by the middle of October. But in some seasons it does not burst till the end of October or even till the middle of November. As a rule the north-east monsoon has little effect west of Kaládgi. Its supply of rain is much less and lasts much shorter than the rainfall of the south-west monsoon. Only in exceptional seasons as in 1874 do the north-east rains pass west to the Sahyádris.[3] The general rule regarding the south-west monsoon is that it is heaviest in the west along the crest of the Sahyádris and grows lighter and less certain as it leaves the western hills and passes over the eastern plain. At the same time the distribution of the supply is greatly affected by the lines of the rivers, by hills, and by other local features. In Sampgaon, which is thirty to fifty miles east of the Sahyádris, the fall both from the south-west and north-east rains is ample and certain. If the south-west rains fail, the want is almost sure to be made good by the north-east rains. The eastern villages sometimes suffer from a scanty fall in the south-west monsoon; but a total failure of crops from drought is said to be unknown. In Parasgad, forty to seventy miles from the Sahyádris, the fall of rain varies greatly in different parts; it is plentiful and certain in the west and grows gradually more uncertain as the plain stretches east, where, along the borders of Navalgund and Nargund in Dhárwár, the seasons are uncertain and the crops are liable to fail. In east Parasgad too the supply of drinking water is very scanty, and in some villages, during the hot weather, water has to be carried several miles.

---

[1] Climate and season details are compiled from materials supplied by Surgeon-Major C. T. Peters, M.B.

[2] Mr. Foote in Mem. Geo. Surv. XII. 14. [3] Mr. Foote in Mem. Geo. Surv. 15, 16.

The hills which enclose Gokák on the south and west, and which are about sixty miles from the Sahyádris, seem to intercept the monsoon showers and make the plain to the east of them very subject to drought. In the plain to the east it is a common saying that a good monsoon comes only once in twelve years.

Rain[1] returns registered for the twenty-three years ending 1882 at the seven sub-divisional stations give for the whole district an average fall of nearly thirty inches. Arranged in order of rainfall, 1863 and 1865 are lowest with twenty inches; 1860 and 1876 are next with twenty-one inches; 1864 and 1873 third with twenty-two inches; 1871 fourth with twenty-three inches; 1861 and 1872 fifth with twenty-five inches; 1867 sixth with twenty-six inches; 1862 and 1866 seventh with twenty-seven inches; 1869 and 1880 eighth with twenty-eight inches; 1868 ninth with twenty-nine inches; 1881 tenth with thirty-two inches; 1870 eleventh with thirty-three inches; 1875 twelfth with thirty-five inches; 1879 and 1882 thirteenth with thirty-seven inches; 1877 fourteenth with thirty-nine inches; and 1874 and 1878 are highest with forty-one inches. Considering how near the district is to the Sahyádris the average fall of thirty inches is low. In Khánápur, whose sub-divisional station is twenty miles from the Sahyádris and in which are situated nearly all the forest reserves, the yearly rainfall varied from twenty-three inches in 1861 to seventy-seven inches in 1878, and averaged fifty-one inches; and in Belgaum, which is twenty-five miles from the Sahyádris, the fall varied from thirty-three inches in 1880 to seventy-one in 1882, and averaged forty-seven inches; at Chikodi, about fifty miles from the Sahyádris, the fall varied from eight inches in 1869 to thirty-seven inches in 1877, and averaged twenty-one inches; at Gokák, about sixty miles from the Sahyádris, it varied from seven inches in 1876 to thirty-three inches in 1877, and averaged seventeen inches; at Athni, about ninety miles from the Sahyádris, it varied from seven inches in 1876 to thirty-four inches in 1878, and averaged nineteen inches; at Saundatti, about sixty miles from the Sahyádris, it varied from ten inches in 1863 and 1865 to forty-one inches in 1874, and averaged twenty inches; and at Sampgaon, about forty miles from the Sahyádris, it varied from nine inches in 1863 to thirty-eight inches in 1874, and averaged twenty-three inches. The following statement gives the details:

Belgaum District Rainfall, 1860-1882.

Station.	1860.	1861.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.
Belgaum	38	58	51	53	39	46	46	39	50	49	55	36
Sampgaon	15	22	25	9	16	14	20	19	24	23	27	17
Khánápur	80	23	44	30	27	34	47	36	57	59	66	50
Chikodi	14	23	26	16	18	17	23	26	21	8	23	17
Saundatti	12	14	15	10	23	10	19	26	18	23	25	15
Gokák	10	14	16	12	12	11	18	17	18	22	21	13
Athni	27	20	17	12	13	19	15	18	16	16	18	13
Average ...	21	25	27	20	22	20	27	26	29	28	33	23

[1] The rain figures must be received with caution as in several cases the returns do not agree.

Chapter I.
Description.
Climate.
Rain.

Belgáum District Rainfall, 1860-1882—continued.

Station.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	Average.
Belgaum	45	40	57	64	36	46	54	54	33	41	71	47
Sampgaon	15	15	38	34	18	30	37	36	27	26	30	23
Khánápur	51	49	74	67	51	64	77	70	46	70	65	51
Chikodi	16	11	25	23	16	37	34	32	21	22	27	21
Saundatti	15	13	41	20	16	37	28	26	24	26	21	20
Gokák	15	10	26	18	7	33	25	22	21	18	27	17
Athni	20	16	31	23	7	31	34	21	28	24	20	19
Average ...	25	22	41	35	21	39	41	37	28	32	37	29

The following statement gives for the twenty-seven years ending 1882 the rainfall at the town of Belgaum for each month in the year. Of the twelve months in the year, February is the driest month with a fall varying from 0·53 of an inch in 1873 to 0·04 of an inch in 1865, and averaging 0·02 of an inch; January comes next with a fall varying from 0·94 of an inch in 1870 to 0·04 of an inch in 1860, and averaging 0·03 of an inch; December is third with a fall varying from 2·88 of an inch in 1863 to 0·02 of an inch in 1865, and averaging 0·33 of an inch; March fourth, with a fall varying from 2·44 of an inch in 1876 to 0·02 of an inch in 1866, and averaging 0·48 of an inch; November fifth, with a fall varying from 5·37 inches in 1878 to 0·04 of an inch in 1877, and averaging 1·13 inches; April sixth, with a fall varying from 4·85 inches in 1865 to 0·03 of an inch in 1866, and averaging 1·85 inches; May seventh, with a fall varying from 10·68 inches in 1856 to 0·67 of an inch in 1861, and averaging 2·77 inches; September eighth, with a fall varying from 9·26 inches in 1874 to 0·09 of an inch in 1860, and averaging 3·29; October ninth, with a fall varying from 7·97 inches in 1880 to 0·18 of an inch in 1864, and averaging 4·47 inches; August tenth, with a fall varying from 22·43 inches in 1861 to 2·25 inches in 1876, and averaging 8·68 inches; June eleventh, with a fall varying from 17·61 inches in 1862 to 0·54 of an inch in 1881, and averaging 9·85 inches; and July is the wettest month, with a fall varying from 29·37 inches in 1882 to 2·78 inches in 1877, and averaging 14·57 inches. The goodness or badness of a year depends less on the fall for the whole year than on its distribution during the rainy months. In 1871, though the fall was only thirty-six inches, it was not a famine year, because the rain was evenly distributed, eight inches in June and July, seven inches in August, one inch in September, and five inches in October. So also the 1880 fall of thirty-three inches was fairly distributed, five inches falling in June, eight in July, three in August, two in September, and seven in October. On the other hand, the year 1876 with a fall of thirty-six was a famine year, because the rain was badly distributed. Six inches fell in June, twenty-one in July, two in August, one in September, and 0·97 of an inch in October. In 1877 of a fall of forty-six inches, sixteen fell in June, three in July, eight in August, seven in September, and seven in October. Owing to the failure of rain in July the year would have been one of great scarcity, but for a timely fall in September and October. The year of heaviest rainfall was 1882 with seventy-one inches. Next to 1882 were 1875, with sixty-

four inches, and 1861 with fifty-eight inches. The limit of the yearly normal rainfall may be said to be between forty and fifty inches :

Belgaum City Rainfall, 1856-1882.

Month.	1856.		1857.		1858.		1859.		1860.		1861.		1862.		1863.		1864.		1865.		1866.		1867.		1868.		1869.	
	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.
Jan. ...	0	00	0	00	0	00	0	00	0	04	0	00	0	00	0	00	0	00	0	00	0	00	0	00	0	00	0	00
Feb. ...	0	00	0	00	0	00	0	00	0	00	0	00	0	00	0	00	0	00	0	04	0	00	0	00	0	00	0	00
March..	0	00	0	40	0	72	0	36	0	09	0	66	0	37	1	59	0	03	0	38	0	02	0	74	0	66	0	00
April ...	1	56	2	45	1	05	2	87	3	37	0	49	0	37	2	63	1	45	4	85	0	03	0	86	2	32	0	69
May ...	10	68	7	71	6	08	2	87	0	98	0	67	1	11	0	00	2	16	2	96	0	53	1	94	5	22	0	64
June ...	11	66	13	08	3	49	4	98	6	74	4	25	17	61	18	60	8	18	3	91	11	39	7	95	15	04	13	97
July ...	12	10	6	53	13	08	22	61	10	23	25	36	8	79	9	37	19	31	14	68	17	71	11	39	10	06	14	33
Aug. ...	6	33	17	52	4	06	6	11	11	66	22	43	10	41	11	04	6	64	13	88	9	17	7	75	13	08	7	69
Sept. ...	2	88	1	17	2	37	5	24	0	09	2	38	5	13	1	47	1	17	0	27	1	11	1	88	1	26	3	14
Oct. ...	2	57	1	10	6	76	3	40	5	17	1	43	6	20	3	44	0	18	4	21	6	40	6	07	2	49	4	70
Nov. ...	0	08	3	14	1	31	1	74	0	00	0	07	0	19	1	69	0	12	0	81	0	00	0	00	0	00	1	79
Dec. ...	0	16	0	00	0	00	0	00	0	00	0	00	0	77	2	88	0	00	0	02	0	06	0	00	0	00	1	79
Total...	48	00	59	11	38	72	50	18	38	28	57	83	50	95	52	70	39	24	45	51	46	42	38	53	50	13	48	74

Month.	1870.		1871.		1872.		1873.		1874.		1875.		1876.		1877.		1878.		1879.		1880.		1881.		1882.		Average.	
	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.
Jan. ...	0	94	0	83	0	00	0	00	0	00	0	00	0	00	0	00	0	00	0	00	0	00	0	00	0	00	0	3
Feb. ...	0	00	0	00	0	00	0	53	0	00	0	00	0	00	0	00	0	00	0	05	0	00	0	00	0	00	0	2
March..	0	26	0	48	0	12	0	22	0	00	0	80	2	44	0	00	0	00	0	00	1	59	0	00	1	13	0	48
April ...	2	47	1	33	2	22	2	05	0	60	3	64	1	19	3	66	2	63	0	64	1	58	1	01	2	07	1	85
May ...	2	96	1	84	1	05	5	43	5	04	1	87	0	00	1	23	1	20	5	35	1	13	1	63	3	23	2	77
June ...	9	43	8	33	11	30	4	16	12	64	15	40	6	01	16	43	5	60	13	40	5	30	0	54	16	74	9	85
July ...	18	60	8	22	15	13	14	42	15	31	25	01	21	11	2	78	12	09	8	66	8	72	18	40	29	37	14	57
Aug. ...	8	61	6	54	3	62	4	78	6	26	8	29	2	25	7	69	14	34	17	13	3	63	10	00	6	61	8	68
Sept. ...	6	14	1	65	5	69	4	80	9	26	3	30	1	94	6	63	6	10	1	40	2	54	3	27	8	81	3	29
Oct. ...	5	22	5	24	3	48	3	49	6	76	4	74	0	97	7	42	6	64	3	81	7	97	1	96	2	82	4	47
Nov. ...	0	66	1	85	0	04	0	58	0	77	1	11	0	00	0	04	5	37	4	40	0	59	4	36	0	34	1	13
Dec. ...	0	00	0	00	2	74	0	00	0	00	0	02	0	00	0	60	0	00	0	07	0	00	0	00	0	03	0	33
Total...	55	29	36	24	45	39	40	46	56	64	63	68	35	91	46	48	53	97	54	91	33	05	41	17	71	15	47	47

Information[1] compiled by Mr. Chambers shows that in Belgaum city, during the sixteen years ending 1872, the average number of rain days varied from 0·1 in February to 25·2 in July. The details are :

Belgaum City Rain Days, 1856-1872.

Month.	Days.	Month.	Days.	Month.	Days.	Month.	Days.
January ...	0·2	April ...	4·7	July ...	25·2	October ...	10·8
February ...	0·1	May ...	6·3	August ...	24·3	November ..	2·2
March ...	1·5	June ...	20·3	September .	14·2	December ..	1·1

The greatest fall recorded in any one day in each month varied from 6·07 inches in August to 0·05 in February. The details are:

Belgaum City Greatest Rain Days, 1856-1872.

Month.	Inches.	Month.	Inches.	Month.	Inches.	Month.	Inches.
January ...	1·06	April ...	2·28	July ...	5·83	October ...	2·87
February ...	0·05	May ...	4·63	August ...	6·07	November ..	2·19
March ...	0·83	June ...	5·51	September .	2·20	December ..	2·60

[1] The climate details from pages 43-51 are from Chambers' Meteorology of the Bombay Presidency, 131-167.

Chapter I. Description. Climate. *Warmth.*

The two daily observations taken at the Belgaum Observatory at 9-30 A.M. and 3-30 P.M. show for the nineteen years ending 1874 a mean temperature of 77·7. The greatest excess of temperature was 1·0° in 1869 and the greatest decrease was 1·6° in 1857. The details are :

Belgaum City Mean Temperature, 1856-1874.

Year.	Mean.	Over Mean.	Year.	Mean.	Over Mean.	Year.	Mean.	Over Mean.
1856 ...	76·8	−0·9	1863 ...	...	...	1870 ...	77·3	−0·4
1857 ...	76·1	−1·6	1864 ...	77·7	0·0	1871 ...	77·6	−0·1
1858 ...	76·8	−0·9	1865 ...	78·0	+0·3	1872 ...	78·2	+0·5
1859 ...	78·6	+0·9	1866 ...	78·2	+0·5	1873 ...	77·7	0·0
1860 ...	77·9	+0·2	1867 ...	77·3	−0·4	1874 ...	77·0	−0·7
1861 ...	77·9	+0·2	1868 ...	78·4	+0·7			
1862 ...	78·0	+0·3	1869 ...	78·7	+1·0			

At the Belgaum Observatory, which is (1878) in the enclosure of the European General Hospital, besides rainfall, thermometer and barometer readings have been recorded since 1851. The observations are under the charge of the senior medical officer. The record comprises two sets of observations made every day at 9-30 A.M. and at 3-30 P.M., and a complete set of twenty-four hourly observations for one day in every month. The instruments and phenomena noted at each observation include the barometer, dry and wet bulb thermometers, the direction of the wind, the cloudiness, and the rainfall. Once a day the maximum and minimum thermometer reading in the shade, the maximum thermometer reading exposed to the sun's rays during the day time, and the minimum thermometer reading laid upon grass exposed to the sky at night are recorded. The observations are registered on printed forms, which when filled are forwarded by the head of the medical department to the Superintendent of the Colába Observatory in Bombay where the calculations are checked and the results compiled. Once a year the registers and compilation are sent by the Superintendent to Government to be forwarded to Her Majesty's Secretary of State for India. In the Belgaum Observatory the self-registering thermometers are placed in a wooden revolving stand, at a distance of 18½ feet from the nearest building, and four feet from the ground: they are fully exposed to the air, and protected from the sun's rays, but it is impossible to prevent rain from getting at them during the revolving storms which occur at the beginning of the south-west monsoon. The thermometer readings are supposed to be too high, as the stand is not suited to a tropical sun. The barometer, and dry and wet bulb thermometers are in a shed in the north-east veranda of the hospital guard-house. The shed which measures thirteen feet by eight by six is built of wooden bars two inches apart; it has a flagged floor, and a post in the middle stretching from floor to roof: this post supports the barometer on one side and the dry and wet bulb thermometers on the other side, the thermometers being four feet seven inches from the floor and two feet seven inches and three feet one inch from the wall.

An examination of the temperature returns in the city of Belgaum for the nineteen years ending 1874 shows that during five months in the year February, March, April, May and June the temperature was

above, and that during the seven remaining months the temperature was below the mean. Adopting the return corrected for the daily inequality, August was the coldest month with an average of 3·3° below the mean, December came next with 3·2°, January third with 2·9°, July fourth with 2·4°, September fifth with 2·2°, November sixth with 1·5°, and October seventh with 0·3°. Of the five hot months February and June are the coolest with 0·4° in excess of the mean, March comes next with 3·8°, May next, with 4·7°, and April is the hottest, being 6·4° above the mean. The details are :

Belgaum City Monthly Temperature, 1856 - 1874.

Month.	At 9-30 A.M. and 3-30 P.M.	Corrected.	Month.	At 9-30 A.M. and 3-30 P.M.	Corrected.
January ...	−2·1	−2·9	July ...	−4·8	−2·4
February...	+2·1	+0·4	August ...	−5·0	−3·3
March ...	+6·1	+3·8	September.	−3·3	−2·2
April ...	+8·2	+6·4	October ...	−1·0	−0·3
May ...	+5·8	+4·7	November..	−1·6	−1·5
June ...	−1·5	+0·4	December..	−2·9	−3·2

The corrections are found from the daily inequalities at the several hours in each month. They are the means of these inequalities for the hours 9 A.M. and 10 A.M. and 3 P.M. and 4 P.M., and are applied subtractively.

The following table shows for the city of Belgaum, for each month, for the monsoon quarter June to August, and for the whole year, the excess of the mean temperature at the several hours of the day above the mean temperature of the twenty-four hours; also the number of complete days' observations, which are generally not more than one in each month, of the year from which the means are derived :

Belgaum Temperature in Local Civil Hours, 1856 - 1874.

Month.	6	7	8	9	10	11	12	13
January	−8·2	−7·3	−4·6	−1·2	+2·0	+4·4	+6·3	+7·0
February	−9·3	−7·9	−4·0	0·0	+3·2	+5·8	+7·6	+9·2
March	−8·3	−6·6	−3·1	+0·7	+4·0	+6·7	+8·6	+10·1
April	−7·8	−5·6	−2·3	+0·5	+4·8	+7·2	+9·3	+10·8
May	−6·0	−4·3	−2·1	+0·4	+2·8	+5·4	+7·8	+9·2
June	−2·4	−1·3	−0·3	+0·9	+2·1	+2·9	+3·5	+4·2
July	−1·8	−1·1	−0·0	+0·8	+1·6	+2·2	+2·3	+2·8
August	−2·7	−2·0	−0·7	+0·8	+2·1	+3·0	+3·9	+4·3
September	−3·5	−2·5	−1·0	+0·6	+2·5	+4·1	+5·3	+5·7
October	−4·4	−3·5	−1·9	−0·2	+1·9	+3·7	+4·7	+5·5
November	−6·7	−5·8	−3·4	−0·2	+2·2	+4·1	+5·5	+6·4
December	−7·2	−6·4	−4·0	−0·6	+2·2	+4·1	+5·8	+6·9
June to August ...	−2·3	−1·5	−0·3	+0·8	+1·9	+2·7	+3·2	+3·8
Year	−5·7	−4·5	−2·3	+0·2	+2·6	+4·5	+5·9	+6·9

Month.	14	15	16	17	18	19	20	21
January	+9·0	+9·6	+9·1	+7·8	+5·1	+3·3	+0·6	−1·0
February	+10·4	+10·2	+9·6	+8·1	+5·9	+2·3	+0·4	−1·7
March	+11·1	+10·9	+9·8	+7·7	+4·0	+0·8	−1·6	−2·9
April	+11·4	+10·4	+8·1	+5·0	+2·3	+0·3	−1·5	−2·6
May	+10·0	+9·3	+7·8	+5·1	+1·9	−0·2	−1·5	−2·5
June	+3·8	+3·0	+2·3	+1·6	+0·4	−0·5	−0·9	−1·2
July	+3·0	+2·4	+1·8	+1·3	+0·3	−0·2	−0·6	−0·9
August	+4·2	+3·7	+3·0	+1·9	+0·6	−0·4	−1·1	−1·4
September	+5·4	+5·0	+4·0	+2·3	+0·7	−0·2	−1·0	−1·6
October	+5·9	+6·0	+5·6	+4·3	+2·1	+0·3	−0·3	−1·1
November	+7·4	+7·4	+6·7	+5·7	+3·6	+2·0	+0·6	−0·9
December	+7·9	+8·1	+7·7	+6·4	+4·2	+2·2	+0·3	−0·7
June to August ...	+3·7	+3·0	+2·4	+1·6	+0·4	−0·4	−0·9	−1·2
Year	+7·5	+7·2	+6·3	+4·8	+2·6	+0·9	−0·5	−1·5

Chapter I. Description. Climate. *Warmth.*

Belgaum Temperature in Local Civil Hours, 1856-1874—continued.

Month.	22	23	0	1	2	3	4	5	Complete Days.
January ...	−2·1	−3·7	−4·1	−5·4	−6·1	−6·7	−6·9	−7·6	16
February ...	−2·6	−3·9	−5·3	−6·1	−6·8	−7·4	−8·2	−8·3	17
March ...	−4·0	−5·0	−5·7	−6·5	−7·0	−7·9	−8·3	−8·6	17
April ...	−3·6	−4·2	−5·2	−6·0	−6·7	−7·5	−8·1	−8·0	17
May ...	−3·4	−4·4	−4·9	−5·2	−5·7	−6·0	−6·5	−6·8	17
June ...	−1·6	−1·9	−2·2	−2·3	−2·5	−2·8	−2·8	−2·7	17
July ...	−1·2	−1·4	−1·5	−1·5	−1·7	−1·8	−1·8	−1·9	17
August ...	−1·8	−2·0	−2·3	−2·4	−2·7	−2·8	−2·9	−3·1	16
September ...	−2·1	−2·5	−2·7	−3·2	−3·2	−3·5	−3·6	−3·9	16
October ...	−1·6	−2·4	−2·8	−3·5	−3·9	−4·4	−5·0	−5·1	16
November ...	−1·9	−2·6	−3·6	−4·5	−5·0	−5·4	−5·8	−6·3	13
December ...	−1·7	−2·5	−3·3	−4·2	−5·0	−5·7	−6·5	−7·0	13
June to Aug.	−1·5	−1·8	−2·0	−2·0	−2·3	−2·5	−2·5	−2·6	
Year	−2·3	−3·0	−3·6	−4·2	−4·7	−5·1	−5·5	−5·8	

The average daily range of temperature for the year is almost double the range for the wet months from June to August. The range during the cold half-year is generally large, compared with the range of the hot and wet half. The daily range for the year is 13·3° and for the wet months 6·4°.

A comparison of the range of the mean temperatures of the different months for the same series of years shows that the variation is least 11·5° in July, August comes second with 12·4°, June third with 16·3°, September fourth with 16·5°, October fifth with 21·7°, November sixth with 23·9°, December seventh with 25·4°, May eighth with 27·5°, January ninth with 28·3°, February tenth with 30·1°, April eleventh with 32·0°, and March twelfth with 32·8°. The details are :

Belgaum City Daily Range, 1856-1874.

Month.	Mean Maximum.	Mean Minimum.	Range.	Annual Variation.	Month.	Mean Maximum.	Mean Minimum.	Range.	Annual Variation.
January ...	86·1	57·8	28·3	+5·1	August ...	78·3	65·9	12·4	−10·8
February...	80·8	59·7	30·1	+6·9	September.	81·4	64·9	16·5	−6·7
March ...	96·0	63·2	32·8	+9·6	October ...	86·2	64·5	21·7	−1·5
April ...	98·4	66·4	32·0	+8·8	November..	85·0	61·1	23·9	+0·7
May ...	94·5	67·0	27·5	+4·3	December..	84·1	58·7	25·4	+2·2
June ...	83·3	67·0	16·3	−6·9					
July ...	78·0	66·5	11·5	−11·7	Year ...	86·8	63·6	23·2	

During the same period the highest recorded monthly mean temperature varied from 92·5 in July to 109·5 in April, and the lowest from 46·7 in December to 62·7 in July. The details are :

Belgaum City Highest and Lowest Monthly Temperature, 1856-1874.

Month.	Maximum.	Minimum.	Range.	Month.	Maximum.	Minimum.	Range.
January ...	95·4	50·0	45·4	July ...	92·5	62·7	29·8
February...	99·7	47·3	52·4	August ...	93·5	61·5	32·0
March ...	103·9	50·2	53·7	September.	93·0	59·4	33·6
April ...	109·5	54·4	55·1	October ...	95·7	53·0	42·7
May ...	108·2	59·0	49·2	November..	94·0	49·0	45·0
June ...	103·1	61·2	41·9	December..	92·6	46·7	45·9

The following statement gives for each of the six years ending 1882 the thermometer readings taken at Belgaum :

Belgaum City Highest and Lowest Monthly Temperature, 1877-1882.

Year.	January.			February.			March.			April.			May.			June.		
	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.
1877	79	62	73	89	64	71	93	68	80	98	71	89	100	70	90	92	71	78
1878	78	64	72	88	63	73	96	67	82	97	73	83	95	74	83	95	72	79
1879	81	61	70	87	64	73	93	62	78	99	70	84	101	71	80	86	70	74
1880	84	58	68	86	64	75	98	70	79	99	71	72	97	74	79	90	69	76
1881	82	56	73	86	59	71	96	65	85	97	72	84	99	71	84	95	73	80
1882	83	60	71	88	61	73	89	63	77	90	70	84	89	74	85	85	71	76

Year.	July.			August.			September.			October.			November.			December.		
	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.
1877	84	70	76	81	70	74	82	71	75	81	68	75	84	60	72	84	62	76
1878	85	70	76	85	71	76	86	72	78	85	70	77	83	64	74	82	58	69
1879	87	70	74	78	70	72	80	67	71	81	68	70	80	58	69	81	59	67
1880	71	69	70	78	68	72	76	69	72	85	67	81	82	65	76	81	58	71
1881	80	71	73	81	70	73	80	67	73	83	66	74	84	61	69	82	57	71
1882	83	70	74	79	70	74	77	70	73	84	65	75	84	62	74	83	61	71

The mean is the mean of four daily observations.

Pressure.

The mean barometric pressure for each year of complete observation is shown for the city of Belgaum in the following table. The means are derived from two daily observations one at 9-30 A.M. the other at 3-30 P.M.: *Belgaum City Barometric Pressure, 1856-1874.*

Year.	Mean.	Excess.	Year.	Mean.	Excess.	Year.	Mean.	Excess.
1856 ...	27·369	+·046	1863 ...	...	...	1870 ...	27·289	−·034
1857 ...	27·326	+·003	1864 ...	27·345	+·022	1871 ...	27·304	−·019
1858 ...	27·331	+·008	1865 ...	27·338	+·015	1872 ...	27·292	−·031
1859 ...	27·325	+·002	1866 ...	27·335	+·012	1873 ...	27·303	−·020
1860 ...	27·324	+·001	1867 ...	27·337	+·014	1874 ...	27·298	−·025
1861 ...	27·322	−·001	1868 ...	27·331	+·008			
1862 ...	27·302	−·021	1869 ...	27·308	−·015			

The observations during the same series of years (1856-1874) show that, in the six months between October and April, the barometric pressure is over the mean, and in the six months between April and October the pressure is below the mean. The month of least pressure is June with 0·096 below the mean, July is next with 0·095, August third with 0·062, May fourth with 0·049, September fifth with 0·025, and April sixth with 0·016. Of the six months of excessive pressure, October is lowest with 0·011, March second with 0·030, November third with 0·062, February fourth with 0·064, December and January fifth and sixth with 0·089 each. The details are: *Belgaum City Monthly Barometric Variation, 1856-1874.*

Month.	At 9-30 A.M. and 3-30 P.M.	Corrected.	Month.	At 9-30 A.M. and 3-30 P.M.	Corrected.
January ...	+·094	+·089	July ...	−·096	−·095
February...	+·067	+·064	August ...	−·062	−·062
March ...	+·030	+·030	September.	−·032	−·025
April ...	−·019	−·016	October ...	+·009	+·011
May ...	−·048	−·049	November..	+·065	+·062
June ...	−·098	−·096	December..	+·089	+·089

Chapter I. Description. Climate. *Pressure.*

In the following table are shown for Belgaum, for each month and for the whole year, the excesses of the mean barometric pressure at the several hours of the day above the mean barometric pressure for the twenty-four hours :

Belgaum City Hourly Barometric Pressure, 1856-74.

Month.	Local Civil Hours.							
	6	7	8	9	10	11	12	13
January	+·012	+·028	+·050	+·066	+·065	+·046	+·022	−·010
February	+·005	+·025	+·046	+·061	+·058	+·045	+·023	−·005
March	·000	+·022	+·045	+·059	+·059	+·048	+·027	−·001
April	+·012	−·027	+·046	+·056	+·055	+·045	+·028	−·001
May	+·014	+·028	+·043	+·055	+·055	+·035	+·017	−·002
June	−·006	+·006	+·020	+·030	+·026	+·020	+·021	−·000
July	−·008	+·002	+·016	+·024	+·030	+·024	+·016	+·001
August	−·004	+·009	+·026	+·038	+·038	+·030	+·016	+·001
September	−·007	+·012	+·032	+·042	+·037	+·026	+·010	−·015
October	+·004	+·021	+·040	+·050	+·048	+·032	+·009	−·016
November	+·011	+·029	+·049	+·065	+·064	+·042	+·014	−·015
December	+·002	+·020	+·041	+·053	+·056	+·040	+·017	−·013
Year	+·003	+·019	+·038	+·050	+·049	+·036	+·017	−·007
June to August ...	−·006	+·006	+·021	+·031	+·031	+·025	+·014	+·001

Month.	Local Civil Hours.							
	14	15	16	17	18	19	20	21
January	−·033	−·049	−·051	−·044	−·033	−·016	·000	+·010
February	−·031	−·046	−·052	−·045	−·033	−·016	+·001	+·016
March	−·025	−·046	−·055	−·048	−·035	−·017	−·002	+·014
April	−·030	−·049	−·056	−·049	−·032	−·017	−·007	+·009
May	−·024	−·041	−·051	−·047	−·033	−·019	−·008	+·007
June	−·011	−·023	−·029	−·028	−·017	−·005	+·007	+·013
July	−·010	−·019	−·028	−·027	−·020	−·009	+·004	+·014
August	−·015	−·027	−·037	−·031	−·022	−·008	+·006	+·020
September	−·033	−·047	−·049	−·039	−·029	−·013	+·005	+·021
October	−·038	−·049	−·048	−·036	−·020	−·004	+·011	+·020
November	−·039	−·051	−·054	−·044	−·032	−·014	+·005	+·017
December	−·035	−·046	−·049	−·039	−·029	−·014	+·002	+·014
Year	−·027	−·041	−·047	−·040	−·028	−·013	+·002	+·014
June to August ...	−·012	−·023	−·031	−·029	−·020	−·007	+·006	+·016

Month.	Local Civil Hours.								Complete Days.
	22	23	0	1	2	3	4	5	
January ...	+·013	+·008	−·002	−·008	−·017	−·025	−·025	−·014	16
February ...	+·018	+·014	+·003	−·009	−·016	−·023	−·022	−·011	17
March ...	+·020	+·014	+·005	−·008	−·016	−·022	−·023	−·015	17
April ...	+·016	+·015	+·002	−·008	−·017	−·019	−·015	−·004	17
May ...	+·013	+·016	+·009	−·004	−·014	−·020	−·018	−·006	17
June ...	+·020	+·021	+·012	+·001	−·007	−·016	−·021	−·022	17
July ...	+·019	+·017	+·011	−·001	−·009	−·017	−·019	−·013	17
August ...	+·026	+·020	+·006	−·006	−·016	−·025	−·026	−·021	16
September ...	+·029	+·022	+·014	+·005	−·004	−·008	−·011	·000	16
October ...	+·024	+·015	+·006	−·006	−·013	−·021	−·024	−·015	16
November ...	+·023	+·015	+·005	−·004	−·015	−·022	−·024	−·015	13
December ...	+·019	+·011	+·008	−·001	−·010	−·016	−·016	−·005	13
Year	+·020	+·015	+·006	−·004	−·013	−·020	−·021	−·012	
June to August.	+·022	+·019	+·010	−·002	−·011	−·019	−·022	−·019	

The following table shows for each month of the year the greatest and least values of the barometric pressures observed at 9-30 A.M. and at 3-30 P.M. :

BELGAUM CITY MONTHLY RANGE OF BAROMETRIC PRESSURE, 1856-1874.

MONTH.	Maximum.	Minimum.	Range.	MONTH.	Maximum.	Minimum.	Range.
January ...	27·624	27·192	·432	July ...	27·411	27·078	·333
February...	27·602	27·200	·402	August ...	27·426	27·104	·322
March ...	27·534	27·185	·349	September..	27·470	27·085	·385
April ...	27·538	27·111	·427	October ...	27·518	27·085	·433
May ...	27·466	27·082	·384	November .	27·599	27·196	·403
June ...	27·403	27·043	·360	December ..	27·650	27·202	·448

Vapour.

The values of the pressure of vapour made use of have been calculated by Glaisher's Hygrometrical Tables from the observed temperatures of the dry and wet bulb thermometers. The annual variations give high values of the vapour pressure in the hot and wet months, that is from May to September, and low values in the cold months. The month of maximum pressure is June. The mean daily variation for the year shows a minimum towards the end of the night hours with a fairly regular progress during the intervals. The variation during the wet months has high values during the day and low values during the night. The daily range of the wet months is very small compared with the daily range of the cold months, and the low range continues till late in the year with the late continuance of the rains.

The following table shows for the nineteen years ending 1874 the mean pressure of vapour from observations taken at 9-30 A.M. and at 3-30 P.M.

BELGAUM CITY PRESSURE OF VAPOUR, 1856-1874.

YEAR.	Mean.	Excess.	YEAR.	Mean.	Excess.
	In.	In.		In.	In.
1856 ...	·634	+·044	1866 ...	·571	−·019
1857 ...	·580	−·010	1867 ...	·643	+·053
1858 ...	·615	+·025	1868 ...	·602	+·012
1859 ...	·571	−·019	1869 ...	·586	−·004
1860 ...	·560	−·030	1870 ...	·594	+·004
1861 ...	·551	−·039	1871 ...	·599	+·009
1862 ...	·585	−·005	1872 ...	·619	+·029
1863 ...	...	...	1873 ...	·608	+·018
1864 ...	·547	−·243	1874 ...	·599	+·009
1865 ...	·595	+·005			

Clouds.

The cloudiness of the sky is estimated in lengths of the celestial hemisphere, the unit being one-tenth of the whole sky. Cloudiness is great during the wet months, and small during the cold months. The following table shows the average cloudiness of the sky in each month of the year from observations taken at 9-30 A.M. and 3-30 P.M., during the same series of nineteen years :

BELGAUM CITY CLOUDINESS, 1856-1874.

MONTH.	Tenths.	MONTH.	Tenths.
January	2·7	July	8·6
February	2·3	August	8·4
March	3·1	September	7·6
April	4·1	October	6·0
May	5·2	November	4·0
June	8·2	December	3·0
		May to October	7·3
		November to April	3·2
		Year	5·3

Chapter I. Description. Climate. *Winds.*

From March to September the prevailing winds are from the west and south, and from October to February from the east and north. The easterly element continues to some extent until April or May, and does not cease until the south-west rains begin. On the other hand, the westerly element is present all the year round, beginning at about two or three in the afternoon and continuing until eight the following morning. Thus during the fair and during the hot months, that is from November till May, while the sun is above the horizon, the wind blows from inland, and towards the interior when the sun is below the horizon. This shows that the prevailing Belgaum winds are essentially different from the coast winds, where in the fair season the land wind blows at night and the sea breeze during the day. The winds of May and October are intermediate between those of the south-west monsoon and those of the dry weather. The observations of the direction of wind taken at Belgaum at 9-30 A.M. and 3-30 P.M. have been grouped together in months. Each group includes the observations of the nineteen years ending 1874 for each month. The following are the results:

Belgaum Winds, 1856-1874.

Direction.	At 9-30 A.M.											
	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
N. ...	13	33	50	54	29	4	...	4	7	46	16	11
N.N.E. ...	...	...	2	6	...	1	...	...	...	1	...	...
N.E.N. ...	68	79	106	92	28	6	1	7	7	62	109	66
E.N.E. ...	4	12	8	11	2	...	...	1	1	9	2	2
E. ...	162	103	78	53	11	3	1	2	5	114	232	232
E.S.E. ...	15	15	4	6	...	1	...	1	...	12	24	16
S.E. ...	135	82	42	24	6	5	...	...	1	34	57	111
S.S.E. ...	10	3	4	2	...	...	...	...	...	3	5	7
S. ...	29	25	20	20	12	8	...	2	3	35	12	6
S.S.W. ...	1	...	...	1	...	10	5	1	...	...	...	...
S.W. ...	29	31	50	65	64	156	191	109	78	29	8	10
W.S.W. ...	...	...	1	...	4	19	40	57	23	3	1	...
W. ...	23	52	84	81	265	269	238	316	305	101	8	8
W.N.W. ...	...	2	2	4	12	6	12	8	17	1	...	...
N.W. ...	...	15	28	33	55	11	...	8	27	17	3	3
N.N.W. ...	...	1	1	3	8	...	...	...	2	...	...	...
Calm ...	33	26	47	55	31	9	6	11	34	59	33	24
Sums ...	527	479	527	510	527	508	494	527	510	525	510	496

Direction.	At 3-30 P.M.											
	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
N. ...	9	12	16	13	7	...	...	...	3	28	21	7
N.N.E. ...	...	2	1	...	...	...	...	...	...	...	1	...
N.E. ...	60	79	40	37	4	1	1	...	5	68	110	100
E.N.E. ...	4·5	8	2	3	...	...	...	...	1	2	2	...
E. ...	173·5	104	80	32	6	1	...	3	2	113	233	243
E.S.E. ...	11	4	1	2	...	...	...	...	...	6	13	11
S.E. ...	87	50	30	18	4	...	1	...	4	23	23	53
S.S.E. ...	3	4	1	1	...	...	...	1	...	1	2	2
S. ...	26	23	17	10	7	5	1	..	3	43	18	9
S.S.W. ...	2	...	...	...	1	7	8	6	1	...	1	...
S.W. ...	53	76	123	135	114	167	191	106	83	55	7	23
W.S.W. ...	1	1	3	7	15	29	45	44·5	23	8	...	3
W. ...	34	84	167	212	333	268	237	356·5	350	117	14	5
W.N.W. ...	...	1	1	2	10	5	2	1	7	2	...	...
N.W. ...	4	10	25	11	22	4	1	4	8	14	5	2
N.N.W. ...	...	...	...	2	...	...	...	...	...	...	...	...
Calm ...	59	21	20	19	4	4	8	5	20	45	49	38
Sums ...	527	479	527	510	527	491	495	527	510	525	509	496

The coefficients and angles of formula representing the daily variation in the duration of different winds are:

Belgaum City Duration of Winds, 1856-1874.

Hours.	November to January.				February to April.				June to September.				Total.			
	c1	c1	c2	c2	c1	c1	c2	c2	c1	c1	c2	c2	c1	c1	c2	c2
		° ′		° ′		° ′		° ′		° ′		° ′		° ′		° ′
6 ...	1·11	78 35	1·17	164 11	·49	291 22	·68	161 2	1·87	253 53	1·52	149 33	·53	254 39	1·14	157 16
7 ...	1·13	81 52	1·21	168 2	·41	278 20	·73	172 53	1·87	253 13	1·51	148 0	·56	248 0	1·14	162 41
8 ...	1·06	80 48	1·08	162 44	·22	333 26	·89	146 29	1·86	254 41	1·48	150 50	·47	251 34	1·13	154 48
9 ...	1·39	92 58	0·90	182 59	·22	65 46	·72	146 19	1·86	253 25	1·48	150 30	·33	229 34	·97	161 56
10 ...	1·55	98 55	0·80	198 53	·27	70 12	·82	165 7	1·87	255 9	1·53	152 12	·35	226 10	1·00	166 40
11 ...	1·58	95 18	0·87	203 38	·51	79 48	·69	194 45	1·86	256 56	1·50	155 9	·25	216 52	·89	174 14
12 ...	1·68	92 23	1·05	186 2	·57	87 59	·73	175 18	1·86	253 25	1·46	148 10	·25	198 26	·97	163 49
13 ...	1·72	90 20	1·17	186 53	·73	67 19	·35	154 53	1·83	251 52	1·41	145 24	·19	188 58	·90	159 9
14 ...	1·65	97 18	1·06	186 52	·52	76 46	·95	146 39	1·75	252 42	1·33	145 43	·26	204 37	1·07	156 48
15 ...	1·48	98 11	1·01	184 32	·07	146 19	1·26	155 22	1·81	250 58	1·35	145 15	·43	224 4	1·13	155 56
16 ...	1·39	96 12	1·23	186 5	·37	239 18	1·17	153 39	1·85	251 4	1·47	145 14	·51	231 20	1·22	155 19
17 ...	1·27	92 15	1·27	183 36	·47	252 43	1·18	154 18	1·87	255 27	1·54	154 36	·58	246 32	1·26	162 0
18 ...	·85	104 22	1·08	184 14	·75	263 4	1·44	158 25	1·88	255 13	1·54	152 36	·76	248 29	1·31	160 19
19 ...	·60	107 32	1·06	166 21	1·36	264 5	1·58	173 49	1·90	255 58	1·59	153 55	1·00	253 44	1·38	162 13
20 ...	·39	94 24	1·12	164 29	1·39	265 2	1·61	173 35	1·88	253 36	1·53	148 54	1·04	265 2	1·38	160 54
21 ...	·47	106 7	1·10	175 19	1·27	257 43	1·51	164 39	1·88	255 49	1·56	154 6	1·02	252 17	1·36	161 34
22 ...	·42	98 8	1·20	170 23	1·26	263 9	1·38	171 13	1·87	256 42	1·54	156 30	1·02	256 22	1·37	163 25
23 ...	·48	79 9	1·15	155 26	1·17	261 58	1·46	172 9	1·87	254 29	1·52	151 45	·96	255 32	1·34	159 57
0 ...	·46	98 51	1·24	157 10	1·24	259 19	1·18	165 44	1·89	256 51	1·58	156 11	·99	255 58	1·34	160 21
1 ...	·53	70 12	1·20	161 34	1·38	261 42	1·27	172 46	1·89	256 33	1·59	154 43	1·03	258 48	1·35	161 26
2 ...	·57	62 59	1·04	155 39	1·26	272 18	1·31	180 0	1·89	257 8	1·59	156 40	·98	261 13	1·27	161 42
3 ...	·61	64 32	1·07	151 31	1·23	275 37	1·07	179 27	1·89	255 36	1·58	153 16	·95	263 19	1·19	159 54
4 ...	·68	65 42	1·14	150 30	1·06	283 7	1·16	188 24	1·88	254 56	1·57	151 48	·86	223 42	1·22	160 23
5 ...	·72	67 1	·99	151 7	·82	282 41	1·23	175 49	1·88	255 49	1·54	153 46	·80	263 30	1·25	159 49
Means ...	·97	90 0	1·06	172 52	·54	270 0	1·07	167 32	1·87	254 46	1·51	151 34	·65	250 10	1·19	160 48
Complete Days.	42				47				63				183			